

amended claim pursuant to 37 CFR § 1.121(c)(1)(ii) appears on the pages immediately after the respective amended claims.

1. (Twice amended) A method of acquiring a three-dimensional image data set of a periodically moving organ of the body of a patient, comprising the steps of:
- irradiating the organ by means of an X-ray device which includes an X-ray source and an X-ray detector,
- detecting a motion signal (H, B) which is related to the periodic motion of the body organ simultaneously with the acquisition of projection data sets (D_0, D_1, \dots, D_{16}),
- successively acquiring the projection data sets (D_0, D_1, \dots, D_{16}) required for the formation of a three-dimensional image data set from different x-ray positions (p_0, p_1, \dots, p_{16}), which x-ray positions are situated in one plane,
- controlling the x-ray device by means of the motion signal (H, B) to acquire a projection data set (D_0, D_1, \dots, D_{16}) during a low-motion phase of the body organ in each X-ray position (p_0, p_1, \dots, p_{16}) required for the formation of the three-dimensional image data set, wherein the motion signal (H, B) is used to control the x-ray device in such a manner that projection data sets (D_0, D_1, \dots, D_{16}) are acquired from individual, selected x-ray positions (p_0, p_1, \dots, p_{16}), and
- using the projection data sets (D_0, D_1, \dots, D_{16}) acquired during the low-motion phases for the formation of the three-dimensional image data set.

12. (Twice Amended) An X-ray device which includes:

an X-ray source and an X-ray detector for the acquisition of a plurality of projection data sets (D_0, D_1, \dots, D_{16}) from different X-ray positions (p_0, p_1, \dots, p_{16}) and for the formation of a three-dimensional image data set of a periodically moving organ of the body of a patient (5) from the projection data sets (D_0, D_1, \dots, D_{16}),

wherein there is provided an arithmetic and control unit for controlling the x-ray device and for forming the three-dimensional image data set such that the projection data sets (D_0, D_1, \dots, D_{16}) required for the formation of the three-dimensional image data set are successively acquired from different x-ray positions (p_0, p_1, \dots, p_{16}) which are situated in one plane,

wherein a projection data set (D_0, D_1, \dots, D_{16}) is acquired during a low-motion phase of the body organ in each X-ray position (p_0, p_1, \dots, p_{16}) required for the formation of the three-dimensional image data set, wherein the motion signal (H, B) is used to control the x-ray device in such a manner that projection data sets (D_0, D_1, \dots, D_{16}) are acquired from individual, selected x-ray positions (p_0, p_1, \dots, p_{16}), and

wherein the projection data sets (D_0, D_1, \dots, D_{16}) acquired during the low-motion phases are used exclusively for the formation of the three-dimensional image data set.
